

### Amendments to the Specification:

Please replace the paragraph beginning on page 1, line 6 with the following amended paragraph:

The subject matter of the present patent application is related to the subject matter set out by Claus Skaanning, Finn V. Jensen, Uffe Kjærulff, Paul A. Pelletier, Lasse Rostrup Jensen, Marilyn A. Parker and Janice L. Bogorad in co-pending patent application Serial Number 09/353,727, filed on July 14, 1999 for AUTOMATED DIAGNOSIS OF PRINTER SYSTEMS USING BAYESIAN NETWORKS, now issued as USPN 6,535,865 B1, and to the subject matter set out by Claus Skaanning in co-pending patent application Serial Number 09/388,891, filed on September 2, 1999 for AUTHORIZING TOOL FOR BAYESIAN NETWORK TROUBLESHOOTERS.

Please replace the paragraph beginning on page 4, line 19 with the following amended paragraph:

In accordance with a preferred embodiment of the present invention, a probabilistic diagnostic system is validated. A diagnostic sequence is generated from a diagnostic model. The diagnostic sequence is evaluated to determine whether the diagnostic sequence provides an acceptable resolution to a problem. This is repeated for additional diagnostic sequences from the diagnostic model. It is determined whether at least a predetermined number of diagnostic sequences provide an acceptable resolution. When it is

determined that at least the predetermined number of diagnostic sequences provide an acceptable resolution, the diagnostic model is accepted.

Please replace the paragraph beginning on page 5, line 2 with the following amended paragraph:

In the preferred embodiment, when it is determined that ~~a~~not at least ~~the~~ predetermined number of diagnostic sequences ~~do not~~ provide an acceptable resolution, a new diagnostic model is generated. Diagnostic sequences previously evaluated for the diagnostic model are checked to see whether these diagnostic sequences provide acceptable resolutions in the new diagnostic model. When it is determined that ~~a~~not at least the predetermined number of diagnostic sequences ~~do not~~ provide an acceptable resolution, a new diagnostic model is generated. For diagnostic sequences previously evaluated for the diagnostic model, a check is made to see whether these diagnostic sequences provide acceptable resolutions in the new diagnostic model. When it is determined that the diagnostic sequences provide acceptable resolutions in the new diagnostic model, additional diagnostic sequences are tested to determine whether, for the new diagnostic model, at least the predetermined number of diagnostic sequences provide an acceptable resolution. When it is determined that the diagnostic sequences already checked do not provide acceptable resolutions in the new diagnostic model a new revised diagnostic model is generated.

Please replace the paragraph beginning on page 8, line 15 with the following amended paragraph:

For example, an efficient process for gathering the information necessary to construct troubleshooters based on Bayesian networks, methods for representation of this information in a Bayesian network, and methods for determining optimal sequences of troubleshooting steps in such troubleshooters is described by Claus Skaanning, Finn V. Jensen, Uffe Kjærulff, Paul A. Pelletier, Lasse Rostrup Jensen, Marilyn A. Parker and Janice L. Bogorad in co-pending patent application Serial Number 09/353,727, filed on July 14, 1999 for AUTOMATED DIAGNOSIS OF PRINTER SYSTEMS USING BAYESIAN NETWORKS, now issued as USPN 6,535,865 B1, (herein "the AUTOMATED DIAGNOSIS patent-application"), the subject matter of which is herein incorporated by reference.

Please replace the paragraph beginning on page 9, line 7 with the following amended paragraph:

In the description below, the diagnostic model is a Bayesian network representing causes, actions and questions. This Bayesian network has a very simple structure – one parent node representing the causes, having nodes representing actions and questions as children. Arcs are directed from the parent node towards the children, giving us what is also called a naïve Bayes network because of the simplicity of the structure. The parent node contains a

prior probability distribution over the causes. The causes are mutually exclusive since they are represented as states of this node. For actions and questions, we have conditional probability distributions over their answers conditional on the causes. The AUTOMATED DIAGNOSIS patent-application and the AUTHORIZING TOOL patent application describe methods for getting these probabilities from domain experts, and methods for computing good sequences of steps based on this representation.

Please replace the paragraph beginning on page 11, line 6 with the following amended paragraph:

For a Bayesian network based troubleshooter constructed in accordance with the AUTOMATED DIAGNOSIS patent-application, three types of information are represented: (1) causes of a problem, (2) actions that can solve the problem, or test something, and (3) questions that provide information about the causes. Probabilities of the causes, probabilities of actions solving causes, probabilities of question answers, probabilities of causes conditional on questions, and probabilities of questions conditional on causes are all represented within Bayesian networks. These probabilities are utilized on computations generating an optimal sequence of troubleshooting steps for the guidance of a user that is experiencing a problem with a device. These probabilities can also be utilized in generating random sequences guaranteeing a certain coverage of the possible diagnostic sequences.